AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the

application:

LISTING OF CLAIMS:

1. (Currently Amended) An image pick-up apparatus for picking up a plurality of images

being chronologically arranged along time-series to provide a~~n~~ ~~digital~~ image, comprising:

a means for obtaining information ~~of~~ about changes in gray level value between ~~those of~~

said plurality of images ~~thus picked up~~; and

a means for de<u>termining</u> ~~ciding~~ a timing <u>for extracting</u> ~~at which~~ at least one of said

plurality of images ~~is to be selectively extracted among those picked up images~~, based upon ~~the~~

results <u>from</u> ~~obtained by said changed image~~ <u>said</u> information ~~obtaining means for using same in~~

~~an image processing, later on.~~.

2. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 1, wherein

said ~~changed image information obtaining~~ means <u>for obtaining information</u> ~~is configured so as to~~

compare<u>s</u> said gray level value of ~~each one and same~~ pixels ~~of~~ <u>in an image</u> ~~each one~~ of said

plurality of images with <u>similarly positioned pixels in another image of said plurality of</u>

<u>images</u>~~each other~~, and ~~thereby~~ obtain<u>s</u>~~ing~~ a number of pixels <u>whose</u> ~~in one of said image,~~ said

gray-level value ~~of~~ <u>has</u> ~~which are~~ increased ~~from those of one and same pixels of other image~~

and a number of pixels ~~in one of said image,~~ whose said gray-level value ~~of which are~~ has

decreased ~~from those of one and same pixels of other image~~.

3. (Currently Amended) ~~An~~The image pick-up apparatus according to Claim 2, wherein

said ~~timing deciding~~ means for determining a timing determines~~eides~~ a timing for ~~selectively~~

extracting one image from said plurality of images ~~among those picked up images,~~-when said

number of pixels with increase ~~in one of said image, said~~ in said gray-level value ~~of which are~~

~~increased from those of one and same pixels of other image is~~-is less than the number of pixels ~~in~~

~~one of said image,~~ with decrease in said gray level value ~~of which are decreased from those of~~

~~one and same pixels of other image~~.

4. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 2, wherein

said ~~timing deciding~~ means for determining a timing determines~~eides~~ a timing for ~~selectively~~

extracting one image from said plurality of images ~~among those picked up images,~~ when a

predetermined threshold value of pixel numbers is greater than an absolute value of a difference

between said number of pixels ~~in one of said image,~~ with increase in said gray-level value ~~of~~

~~which are increased from those of one and same pixels of other image and~~ and the number of

pixels ~~in one of said image,~~ with decrease in said gray-level value ~~of which are decreased from~~

~~those of one and same pixels of other images less than a predetermined threshold value of pixel~~

~~numbers~~.

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5. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 3, wherein,

said ~~changed~~ image information obtaining means for each image in said plurality of

images obtains a number of pixels ~~each having~~ whose said gray-level value exceed~~ing over~~s a

predetermined gray-level threshold value ~~of said gray-level value in each one of said images thus~~

~~pickedup~~; and

said timing ~~deciding~~determining -means determine~~s~~ said~~a~~ timing for ~~selectively~~

extracting said one image~~among those picked up images~~, when said number of pixels of the one

image with said gray-level value above the gray-level threshold value ~~each having said gray-~~

~~level value~~ exceed~~ing over~~s a predetermined pixel number threshold ~~value of said gray-level~~

~~value in one image outnumbering a predetermined threshold value of pixel numbers, and further~~

~~when said number of pixels in one of said image, said gray-level value of which are increased~~

~~from those of one and same pixels of other image is less than the number of pixels in one of said~~

~~image, said gray-level value of which are decreased from those of one and same pixels of other~~

~~image~~.

6. (Currenlty Amended) The~~An~~ image pick-up apparatus according to Claim 2, wherein

said ~~changed~~ image information obtaining means for each image in said plurality of

imagaes obtains a number of pixels ~~each having~~ with said gray-level value exceeding ~~over~~ a

predetermined gray level threshold value ~~of said gray level value in each one of said images thus~~ ~~pickedup~~; and

said timing de~~ciding~~terminingciding means determines ~~sides~~said~~a~~ timing for ~~selectively~~ extracting one image from said plurality of images ~~among those picked up images~~, when said number of pixels ~~each having~~with said gray-level value exceeding ~~over a~~said predetermined gray level threshold value ~~of said gray level value in one image~~ outnumber~~ing~~s a predetermined pixel numbers threshold ~~value of pixel numbers~~, and further when an absolute value of a difference between said number of pixels ~~in one of said~~with increase ~~image,~~in said gray-level value ~~of which are increased from those of one~~ and ~~same pixels of other image and~~ the number of pixels ~~in one of said image,~~with decrease in said gray-level value ~~of which are decreased from those of one and same pixels of other images~~is less than a second predetermined pixel number threshold~~value of pixel numbers~~.

7. (Currently Amended) ~~The~~An image pick-up apparatus according to Claim 2, wherein said plurality of images ~~are~~comprises at least two successive images which had been successively picked up by said image pick-up apparatus~~successively~~.

8. (Currently Amended) ~~The~~An image pick-up apparatus according to Claim 7, wherein a first image ~~among~~from said at least two ~~plurality of~~successive images ~~consists~~is a first frame

and a second image ~~among~~ from said at least two ~~plurality of successive~~ image_s_ ~~consists~~ is a

second frame.

9. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 8, wherein

said apparatus further comprises~~ing~~:

an image picking up means for picking up images:~~;~~

a memory means for storing said images: ~~picked up by said apparatus, which~~ comprising

~~a~~ first memory means and ~~a~~ second memory means for said plurality of images, and

a data processing means comprising: a pixel comparing means, a pixel number counting

means for counting a number of said pixels whose ~~a~~ gray level value ~~of which~~ has ~~been~~ changed,

and said~~a~~ timing determining~~eiding~~ means ~~for deciding a timing at which at least one of said~~

~~images can be extracted as a suitable image for image processing purpose~~, and

an output means.

10. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 9, wherein

~~a~~ said first frame ~~among said successive images~~ is stored int~~o~~ said first memory means and said ~~a~~

second frame ~~among thereof and which has been~~ picked up immediately after said first frame

~~image by said image pick-up apparatus~~ is stored int~~o~~ said second memory means.

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11. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 9, wherein

~~in~~ said pixel comparing means~~,~~ compares a gray level value of each ~~one of~~ pixel in said first

frame ~~pixels of said first frame of said first image is compared~~ with a gray level value of each

~~one and same pixels~~ pixel in ~~of~~ said second frame pixel corresponding to said each pixel in said

first frame ~~of said second image, each other~~.

12. (Currently Amended) The~~An~~ image pick-up apparatus according to Claim 1, wherein

said image processing compris~~ing~~es a fingerprint image data processing.

13. (Currently Amended) The~~An~~ image pick-up method for picking up a plurality of

images being chronologically arranged along time-series to provide a~~n~~ ~~digital~~ image, comprising

~~the steps of~~:

obtaining information ~~of~~ about changes in gray level value between ~~those of~~ said plurality

of images ~~thus picked up~~; and

deciding a timing at which at least one of said plurality of images is to be ~~selectively~~

extracted ~~among those picked up images~~, based upon ~~the~~ results obtained ~~by said changed image~~

from said information ~~obtaining means for using same in an image processing, later on~~.

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14. (Currently Amended) The~~An~~ image pick-up method according to Claim 13, wherein ~~said step of~~ obtaining said ~~changed image~~ information further comprises:~~in gray level value in each of said plurality of images~~

comparing~~es~~ said gray level value of ~~each one and same~~ pixels ~~of each~~ in one image ~~one of~~ from said plurality of images with ~~each other,~~ similarly positioned pixels of another from said plurality of images, and ~~thereby~~

obtaining a number of pixels in said one image whose ~~in one of said image,~~ said gray-level value ~~of which are~~ has increased ~~from those of one~~ and ~~same pixels of other image and~~ a number of pixels in said one image ~~in one of said image,~~ whose said gray-level value ~~of which are~~ has decreased ~~from those of one and same pixels of other image.~~

15. (Currently Amended) The~~An~~ image pick-up method according to Claim 14, wherein ~~said step of~~ determining~~ciding~~ a timing for ~~selectively~~ extracting at least one image from said plurality of images is based on ~~among those picked up images, decides a timing for selectively extracting one image among those picked up images,~~ when said number of pixels ~~in one of said image,~~ with increase in said gray-level value ~~of which are increased from those of one and same pixels of other image~~ is less than the number of pixels ~~in one of said image,~~ with decrease in said gray-level value ~~of which are decreased from those of one and same pixels of other image~~.

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16. (Currently Amended) ~~The~~An image pick-up method according to Claim 14, wherein

~~said step of~~ determining~~deciding~~ a timing for ~~selectively~~ extracting ~~one~~ an image ~~among those

picked up images, decides a timing when~~ is based on a predetermined threshold value of pixel

numbers being greater than an absolute value of a difference between said number of pixels ~~in

one of said image, said~~ with increase in said gray-level value ~~of which are increased from those

of one and same pixels of other image~~ and the number of pixels ~~in one of said image, said gray-

level value of which are~~ with decreased in said gray-level value ~~from those of one and same

pixels of other images less than a predetermined threshold value of pixel numbers.~~

17. (Currently Amended) ~~The~~An image pick-up method according to Claim 13,

wherein~~;~~

said step of obtaining said ~~changed image~~ information obtains a number of pixels of an

inmage of said plurality of images ~~each~~ having said gray-level value exceeding ~~over~~ a

predetermined gray level threshold value ~~of said gray level value in each one of said

images thus picked up~~; and

said step of deciding a timing for ~~selectively~~ extracting one image ~~among those picked up

images~~ decides a timing where~~n~~ said number of pixels ~~each having~~ with said gray-level value

exceeding ~~over~~ said a predetermined gray level threshold value ~~of said gray level value in one

image~~ outnumber~~sing~~ a predetermined threshold value of pixel numbers, and further where~~n~~ said

number of pixels ~~in one of said image,~~ with increase in said gray-level value ~~of which are~~

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~~increased from those of one and same pixels of other image~~ is less than the number of pixels ~~in~~

~~one of said image,~~ with decrease in said gray-level value ~~of which are decreased from those of~~

~~one and same pixels of other image~~.

18. (Currently Amended) The~~An~~ image pick-up method according to Claim 13,

wherein:~~;~~

said step of obtaining ~~said changed image~~ information obtains a number of pixels in an

image from said plurality of images, ~~each~~ with ~~having~~ said gray-level value exceeding ~~over~~ a

predetermined gray level threshold value ~~of said gray level value in each one of said images thus~~

~~picked up~~; and

said step of determining~~ciding~~ a timing ~~for selectively extracting one image among those~~

~~picked up images decides~~ determines said~~a~~ timing when said number of pixels ~~each having~~ with

said gray-level value exceeding ~~over~~ a predetermined gray level threshold value ~~of said gray~~

~~level value in one image~~ outnumbers~~ing~~ a predetermined threshold value of pixel numbers, and

further when an absolute value of a difference between said number of pixels ~~in one of said~~

~~image,~~ with increase in said gray-level value ~~of which are increased from those of one and same~~

~~pixels of other image~~ and the number of pixels ~~in one of said image,~~ with decrease in said gray-

level value ~~of which are decreased from those of one and same pixels of other images~~ is less than

a second predetermined pixel number threshold ~~value of pixel numbers~~.

19. (Currently Amended) The~~An~~ image pick-up method according to Claim 13, wherein said plurality of images ~~are~~ comprises at least two successive images which had been successively picked up by said image pick-up method~~apparatus successively~~.

20. (Original) The~~An~~ image pick-up method according to Claim 13, wherein a first image ~~among~~from -said ~~plurality of~~ at least two successive images comprises~~nsists~~ a first frame and a second image ~~among~~ from said at least two~~plurality of~~ successive images ~~consists~~ comprises a second frame.

21. (Currently Amended) The~~An~~ image pick-up method according to Claim 13, wherein said ~~apparatus~~ method further comprises~~:ing~~

~~an image picking up means~~picking up said plurality of images with an image picking up means~~;~~

~~a memory means for~~storing said images by storing said first frame image data from said at least two successive images into a first memory means and storing said second frame image data from said at least two successive images into a second memory means;~~picked up by said apparatus, which comprising a first memory means and a second memory means;~~

~~a data processing means comprising a pixel~~comparing and counting number of pixels with a change in gray level value by using data processing means;~~; a pixel number counting means for counting a number of said pixels a gray level value of which has been changed~~ and

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~~a timing deciding means for~~ determing ~~ciding~~ a timing ~~at which at least one of said~~

~~images can be~~ to extracted ~~as~~ at least one ~~a~~ suitable image for image processing ~~purpose~~, and

outputting said at least one suitable image. ~~an output means and said method is further~~

~~comprising the steps of;~~

~~storing a first frame image data among said successive images into said first memory~~

~~means and~~

~~storing a second frame image data among said successive images into said second~~

~~memory means~~.

22. (Currently Amended) The~~An~~ image pick-up method according to Claim 13, wherein

said method further comprises: ~~the steps of;~~ comparing said~~a~~ gray level value of each one of said

pixels of said first frame ~~of said first image is compared~~ with a gray level value of each one

similarly positioned ~~and same~~ pixels of said second frame ~~of said second image, each other~~.

23. (Currently Amended) The~~An~~ image pick-up method according to Claim 13, wherein

said image processing comprises~~ing~~ a fingerprint image data processing.